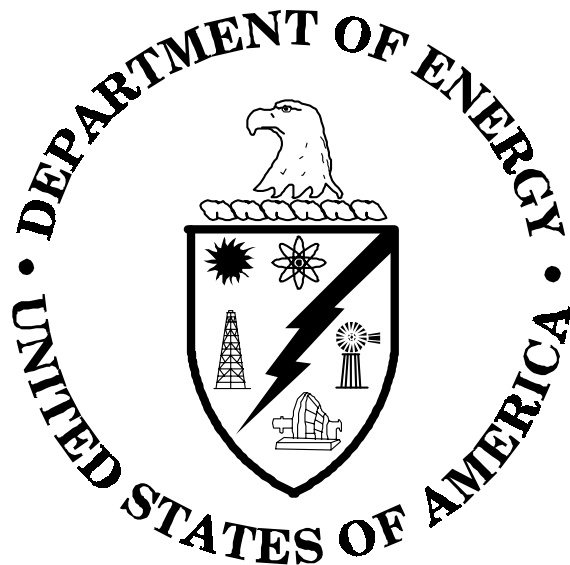


The U. S. Department of Energy Industry Interactive Procurement System (IIPS) is the official medium used for posting amendments to this solicitation. Any data coming from any other source is not official. All interested applicants shall monitor this website to remain abreast of any such changes.

SOLICITATION DE-PS07-02ID14265

August 2002



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University Research for the High Temperature Superconductivity Program

AGENCY

Department of Energy, Idaho Operations Office

ACTION

Solicitation for Financial Assistance: DE-PS07-02ID14265, University Research for the High Temperature Superconductivity Program (URSC)

SUMMARY

The U.S. Department of Energy (DOE) Idaho Operations Office (ID) is seeking applications for university research projects in partnership with a national laboratory in support of the High Temperature Superconductivity Program to expand the research base. Knowledge gained from this work will result in new and improved technology that will help meet superconductivity program goals.

The purpose of the solicitation is to advance the state of the art, increase the understanding, and accelerate the development of high temperature superconductivity. DOE created the High Temperature Superconductivity Program in 1988 to help U.S. Industry develop this new technology for application to electric power needs. The research solicited in this announcement is to develop innovative superconducting technologies. Research proposals must identify one of the national laboratories who is currently participating in the superconductivity research.

Approximately \$1,000,000 dollars per year in federal funding are available over the next three fiscal years. DOE anticipates making five awards with a duration of three years. The financial assistance will be awarded as cooperative agreements in accordance with DOE Financial Assistance regulations, Title 10 of the Code of Federal Regulations, Chapter II, Subchapter H, Part 600 (10 CFR 600). The award of a cooperative agreement under this solicitation does not commit the Government to fund any follow-on research. Successful applicants will be required to participate in the annual, performance-based peer review and to submit quarterly, annual, and final reports to DOE. See Financial Assistance Report Submittal Guidance at URL <http://www.id.doe.gov/doeid/PSD/proc-div.html>.

Project performance periods are divided into budget periods. The performance period for the first budget period is anticipated to be 12 months.

DOE may issue a continuation award (e.g., the Phase Two), if (1) the awardee demonstrates sufficient progress toward the goals of the project; (2) has completed the objectives in compliance with a mutually agreed upon management plan; (3) has

submitted timely and informative reports; (4) has identified the objectives planned for the new budget period; and (5) federal funds are available.

COST SHARE

Cost share is not required.

ELIGIBLE APPLICANTS

ONLY U. S. institutions of higher education in partnership with national laboratories are eligible for cooperative agreements under this solicitation. U. S. institutions of higher education will be prime awardee under this solicitation. The purpose of this partnership is to provide the underlying knowledge base needed for the success of the industry-led projects. Strategic research is led by the national laboratories with close collaboration with academia and focuses on research to address fundamental technological issues that will result in a better understanding of the relationship between HTS materials microstructure and their ability to carry currents over long lengths. Strategic Research includes efforts in basic materials processing, systems and benefits analysis, and cryogenic systems.

STATUTORY AUTHORITY

The statutory authority for this program is the Department of Energy Organization Act of 1977, Public Law 95-91 and the Federal Non-nuclear Energy Research and Development Act, Public Law 93-577.

CFDA NUMBER

The Catalog of Federal Domestic Assistance (CFDA) Number for this program is 81.087, Renewable Energy Research and Development.

CONTACT FOR FURTHER INFORMATION OR QUESTIONS AND ANSWERS

Questions must be submitted to Ms. Elizabeth E. Dahl, contract specialist, by facsimile at 208-526-5548, e-mail: dahlee@id.doe.gov, or by telephone at (208) 526-7214 no later than **September 30, 2002**. Questions and answers to the questions will be posted to the Industry Interactive Procurement System (IIPS) website as an amendment to this solicitation. The URL for this website is as follows: <http://e-center.doe.gov>. The contracting officer for this solicitation is Dallas L. Hoffer.

PRE-SUBMISSION AND REVIEWS

1. There are no briefings or required pre-submission reviews and clearances

planned for this solicitation.

2. Review under E.O. 12372, "Intergovernmental Review of Federal Programs" is not required.

APPLICATIONS

The application face sheet Standard Form (SF) 424 "Application for Federal Assistance", the technical proposal, and resumes are considered an application. The SF 424 is available at the following URL: <http://www.id.doe.gov/doiid/PSD/proc-div.html>. The word document of SF 424 is available at this website: [http://doi-iips.pr.doe.gov/iips/busopor.nsf/Solicitation+By+Number/8B034F49608345F58525699D00575933/\\$file/10781atb1+SF424.doc](http://doi-iips.pr.doe.gov/iips/busopor.nsf/Solicitation+By+Number/8B034F49608345F58525699D00575933/$file/10781atb1+SF424.doc). The application is to be prepared for the complete project period. A separate application shall be prepared for each research project.

Technical proposals must not exceed 20 pages excluding the required SF 424 and technical resumes. Pages that exceed the page limitation will not be evaluated.

An application consists of the technical proposal, SF 424 form and resumes not to exceed 3 pages each

Applicants must include a separate, non-proprietary summary (maximum of one page) describing the proposed project, including a description of project benefits, suitable for public release. This summary will be included in any response to a request for information about the project. This summary will not be used for evaluation of applications and is not included in the page limitation described above.

Applications must be formatted to fit on standard 8-1/2" x 11" letter size paper. Margins on all four sides must not be smaller than 1"; font size must not be smaller than 11 point Arial or equivalent. The front and backsides of a single sheet are counted as 2 pages.

SUBMISSION INSTRUCTIONS

Signed and completed applications (SF 424, the technical proposal, and resumes) are required to be submitted as an Adobe PDF file via IIPS in accordance with the instructions outlined in this solicitation and the IIPS User Guide. The Guide can be obtained by going to the IIPS Homepage at: <http://e-center.doe.gov> and then clicking on the "Help" button. Individuals who have the authority to enter their company into a legally binding contract/agreement and intend to submit proposals/applications via IIPS must register and receive confirmation that they are registered prior to being able to submit an application on IIPS. Once an applicant is registered with IIPS, a signature on

IIPS is the typed name of the applicant in Block 18 of the SF 424. Questions regarding the operation of IIPS may be e-mailed to the IIPS Help Desk at helpdesk@pr.doe.gov or call the help desk at (800) 683-0751, option 1.

NOTE: AT THE INDUSTRY INTERACTIVE PROCUREMENT SYSTEM PROPOSAL COVER PAGE, USE THE 'ATTACH TECHNICAL PROPOSAL' LINK TO SUBMIT THE APPLICATION.

SUBMISSION METHOD

The only acceptable mode of application transmission is through IIPS. Applications submitted through other means will be considered non-responsive and will not be considered for an award.

APPLICATION DUE DATES

The technical proposal, SF 424, and resumes must have an IIPS transmission time stamp of not later than 5:00 p.m. ET on Friday, **October 25, 2002**. Late applications will not be considered.

UNSUCCESSFUL APPLICANT BRIEFING INFORMATION

Applicants may ask for a briefing by submitting a written request to the DOE Merit Review Committee Chairperson no later than fourteen days after notification that the application was not selected. The debriefing will be done by telephone. Unsuccessful applications will not be returned.

PROJECTED SOLICITATION MILESTONES

The following are anticipated/projected milestones for this solicitation.

- Questions and Answers by September 30, 2002
- Application Due by October 25, 2002
- Merit review activities by November 25, 2002
- Announcement of selection by December 15, 2002
- Award activities by September 30, 2003

Applications will be evaluated immediately after the technical application due date deadline.

SECTION I: SUPPLEMENTARY INFORMATION

Background

The U.S. Department of Energy (DOE) through its High Temperature Superconductivity (HTS) Program works in partnership with U.S. universities and industry to establish HTS as a major, competitive contributor to the U.S. energy supply for electricity. The Program sponsors research and development that will help the United States realize substantial economic, environmental, and energy security benefits. The research must support Superconductivity for Electric Systems Program milestones, research objectives, and long-term goals. Information on Superconductivity for Electric Systems Program can be found at URL:

http://www.eren.doe.gov/superconductivity/pdfs/superconelectric_reg_materials.pdf.

DOE High Temperature Superconductivity (HTS) Program activities are organized into three categories: strategic research, wire development, and systems technology. Researchers in wire technology are developing coated conductor (second generation) HTS wires displaying large currents and current densities when cooled to liquid nitrogen temperatures. In systems technology, industry-led teams involving national laboratories and universities are developing long-length power cables, power transformers, and other prototype components that will be integrated into complete electric systems. These demonstrations are supported through the Superconductivity Partnerships with Industry (SPI) activity and device-specific projects. Strategic research involves universities, industry, and national laboratories in the investigations to address the key technology issues related to materials processing, oxide microstructure development in HTS wires and tapes, thin film nucleation and growth mechanisms, the systems related issues of AC losses and stability of superconductors, and the challenge of cryogenic cooling.

Project Description

The objective of this solicitation is to seek fundamental research and development in four interrelated research areas:

1. HTS coated conductor wire fabrication through improved methods to produce highly aligned buffer and superconductor layers;
2. Production of HTS wire with performance characteristics, such as, current = 100 to 1000 A, engineering current density = 1 to 10 MA/cm², length = 100 to 1000 m, strain tolerance = 0.5 to 0.7%, magnetic field tolerance = 2 to 5 T, and operating temperature = 65K to 77K;
3. Improved magnetic flux pinning of HTS material; and
4. Lower cost of HTS wire production.

NOTE: Research on magnesium diboride (MgB₂) is specifically excluded from this solicitation.

SECTION II: Technical Application Requirements

Each application must contain the following information and must use the following format:

1.0 EXECUTIVE SUMMARY

- 1.1 Proposed project and why it is appropriate for the DOE High Temperature Superconductivity Program and the relationship to the objectives of the solicitation
- 1.2 Organizational Plan (Identify all project participants including a national laboratory. Discuss the role of each participant.)
- 1.3 Specialized Experience

2.0 CRITICAL REVIEW OF RESEARCH AREA

- 2.1 Discuss current status of proposed research areas
- 2.2 Why the identified national laboratory is not pursuing the proposed research area

3.0 PROJECT DESCRIPTION

- 3.1 Introduction, including how the national laboratory will benefit from the proposed R&D and identify the research area (listed under project description) the proposal addresses
- 3.2 Proposed concepts
- 3.3 Technical feasibility and targets
- 3.4 Hurdles to be overcome by the proposed R&D

4.0 PROJECT PLAN

- 4.1 Project Goals and Scope
- 4.2 Statement of Work
- 4.3 Statement of Objectives
- 4.4 Work Breakdown Structure
- 4.5 Milestone plan and schedule
- 4.6 Technical targets, decision points, and go/no-go decision criteria
- 4.7 Spending plan by task, phase, and year

For example: Task XX, Phase XX, Year XX

Participant	DOE Funds Requested
Name of Prime Applicant	\$ xxx
Name of Participant #1	\$ xxx
Name of Participant #2	\$ xxx
	Total DOE = \$

5.0 TECHNICAL CAPABILITIES

- 5.1 Key personnel, education, experience, and responsibilities
- 5.2 Justification for needed facilities and equipment

6.0 PROJECT MANAGEMENT PLAN

- 6.1 Project organization and responsibilities
- 6.2 Task integration and project coordination
- 6.3 Project management structure including implementation and monitoring of R&D
- 6.4 Management philosophy
- 6.5 Technology transfer to the national laboratory - Identify the path that will be used by the project team to integrate the technology with the cooperating national laboratory. Describe how the technology will be made available to the national laboratory at the earliest practical time. Include current and potential partnering strategies, follow-on development phases, licensing strategies, and a discussion of potential barriers and how the barriers will be overcome. Name at least one national laboratory staff member with whom the proposed university research will be coordinated.

SECTION III: APPLICATION EVALUATION

Merit Reviews

All applications will be evaluated under the procedures for "Objective Merit Review of Discretionary Financial Assistance Applications," which was published in the Federal Register on May 19, 1998 (Vol. 63, No. 96).

Applications will be rated by the merit review committee and those applications with the highest scores may be contacted by the contracting officer for clarifications before the committee makes their final recommendation to the Selection Official. Clarifications may be through additional written submissions or orally.

Selection Criteria

Only those applications which meet all of the requirements of this solicitation will be considered for selection. Selections will be made in accordance with the following selection criteria and programmatic considerations. All applications will be evaluated and point-scored in accordance with the following criteria. The applications must be fully responsive in addressing each of the following criteria.

Criterion 1 (10 points): Understanding of Present State of the Art in High Temperature Superconductivity: (Technical Application Requirements 1.0 and 2.0.)

- A. Proposers must demonstrate an understanding of the present state of the art in high temperature superconductivity as well as an understanding of the key issues that need to be addressed to help meet the Superconductivity Program goals.
- B. A knowledge of the pertinent literature will also be evaluated through the citations listed in the proposal.
- C. The relationship of the proposed work to the present state of knowledge in the field will be evaluated.

Criterion 2 (50 points): Research Concept and Plan – The technical potential of the proposal will be evaluated considering: (Technical Application Requirements 3.0 and 4.0.)

- A. The responsiveness of the proposal to the four intrrelated research areas (in the *Project Description* of SECTION I: SUPPLEMENTARY INFORMATION);
- B. The clarity, completeness, and adequacy of the statement of

objectives and of the description of new knowledge to be gained by performing the proposed research (including a review of supporting data obtained in laboratory and/or pilot scale work completed to date);

- C. The technical merit and feasibility of the proposed work (i.e., is it based on sound scientific/engineering principles and on an understanding of current state of the art in high temperature superconductivity); and
- D. The adequacy and appropriateness of the schedule (sequence of project tasks, planned levels of data acquisition, sampling and analyses, principal milestones, decision points, and time for each task) and the planned assignment of responsibilities and level of manpower to complete the research.

Criterion 3 (30 points): Applicant/Team Qualifications, Capabilities, and Facilities – Qualifications, capabilities, and facilities will be evaluated considering: (Technical Application Requirements 5.0.)

- A. Ability to assemble a multi-disciplined team with research experience and qualifications in the proposal subject area;
- B. Knowledge of past advanced developments in the work proposed;
- C. The availability and adequacy of equipment, laboratory and demonstration facilities, analytic support, and other necessary resources for performing the work proposed; and
- D. Project management methods and controls.

Criterion 4 (10 points): National Laboratory Partner and Research Integration Plan – The proposed national laboratory involvement will be evaluated considering: (Technical Application Requirements 6.0.)

- A. Participation with the national laboratory in performing the research activities;
- B. In identification of, and commitment to, a viable mechanism, plan, or path to integrate the research into the national laboratory at the earliest practicable time; and
- C. Identification of at least one national laboratory staff member with whom the proposed research will be coordinated.

Weighting of Criteria

The criteria will be based on a maximum of 100 points and individually weighted as indicated above.

Programmatic Selection Considerations

In conjunction with the evaluation results and rankings of individual applications, the Government will make selections for negotiations and planned awards from among the highest-ranking applications, using the following programmatic considerations.

1. Programmatic goals include the desire for a portfolio of research projects balanced with respect area of research to high risk vs. low risk research, long-term vs. short-term market penetration horizons, and short duration vs. long duration projects.
2. Applications must address one or more of the research needs of the national laboratories participating in the High Temperature Superconductivity Program and should potentially benefit a broad cross-section of the HTS research community.
3. The total proposed cost of the project will not be point scored. Applicants are advised, however, that notwithstanding the lower relative importance of the project cost, the cost may become a consideration in selections.

SECTION IV: GENERAL CONDITIONS

Non-governmental Reviewers

In conducting this evaluation, the Government may utilize assistance and advice from non-Government personnel. Non-government personnel with expertise in the field from industry, industry consortiums, and academia may be utilized to review applications. All reviews must sign a "U. S. Department of Energy Conflict-of-Interest/Non-Disclosure Certificate" prior to reviewing any applications. Applicants are therefore requested to state on top of the technical proposal if they do not consent to an evaluation by such non-Government personnel. The applicants are further advised that DOE may be unable to give full consideration to an application submitted without such consent.

Application Preparation Costs

DOE is under no obligation to pay for any costs associated with preparation or submission of applications if an award is not made. If an award is made, such costs may be allowable as provided in the applicable cost principles (Reference 10 CFR 600.127 and 10 CFR 600.222).

Partial Awards

DOE reserves the right to support, or not to support, all, or any part of any application. Unsuccessful applications will not be returned. After selection has been finalized, the solicitation and any related proposals will be archived on the IIPS system.

Proprietary Application Information

Applications submitted in response to this solicitation may contain trade secrets and/or privileged or confidential commercial or financial information, which the applicant does not want used or disclosed for any purpose other than evaluation of the application. The use and disclosure of such data may be restricted, provided the applicant marks the cover sheet of the application with the following legend and specifies the pages of the application which are to be restricted in accordance with the conditions of the legend:

"The data contained in pages ____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant."

Further, to protect such data, each page containing such data must be specifically identified and marked, including each line or paragraph containing the data to be

protected with a legend similar to the following:

"Use or disclosure of the data set forth above is subject to the restriction on the cover page of this application."

It should be noted, however, that data bearing the aforementioned legend may be subject to release under the provisions of the Freedom of Information Act (FOIA), if DOE or a court determines that the material so marked is not exempt under the FOIA. The Government assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose. Applicants are hereby notified that DOE intends to make all applications submitted available to non-Government personnel for the sole purpose of assisting the DOE in its evaluation of the applications. These individuals will be required to protect the confidentiality of any specifically identified information obtained as a result of their participation in the evaluation.

SECTION V: NOTICES TO APPLICANTS

- A. **False Statements**
Applications must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements is prescribed in 18 U.S.C. 1001.
- B. **Application Clarification**
DOE reserves the right to require applications to be clarified or supplemented to the extent considered necessary either through additional written submissions or oral presentations.
- C. **Amendments**
Any amendments to this solicitation will be posted on the U.S. Department of Energy Industry Interactive Procurement System (IIPS). Only the Contracting Officer may amend this solicitation. Any data, information, or instructions coming from any other source are not official.
- D. **Applicant's Past Performance**
DOE reserves the right to solicit from available sources relevant information concerning an applicant's past performance and may consider such information in its award evaluation and negotiation process. Past performance information may include an applicant's on-time reporting history.
- E. **Commitment of Public Funds**
The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed award. Any other commitment, either explicit or implied, is invalid.
- F. **Application Effective Period**
All applications shall remain in effect for at least 180 days from the application due date.
- G. **Availability of Funds**
The actual amount of funds to be obligated in each fiscal year will be subject to availability of funds appropriated by Congress. DOE reserves the right to fund in whole or in part, any, all, or none of the applications submitted in response to this solicitation.
- H. **Assurances and Certifications**
DOE requires the submission of pre-award assurances of compliance and certifications, which are mandated by law or regulations. If selected, these

submissions shall be completed and provided when requested by the contract specialist.

I. Pre-Award Costs

The government is not liable for any costs incurred in preparation of an application. Awardees of research projects may incur pre-award costs up to ninety days prior to the effective date of the award. Specific, written authorization from the Contracting Officer is required before pre-award costs are incurred if the authorization is needed for more than 90 calendar days or if the project is a non-research project. Should the awardee incur any pre-award costs, it is done so at the awardee's risk and does not impose any obligation on the DOE to issue an award (10 CFR 600.125). Pre-award cost authorizations will not be made retroactively. Pre-award costs may be considered as part of the applicants cost share but must meet the financial assistance regulations as listed in 10 CFR 600.123 and 10 CFR 600.127.

J. Intellectual Property

Applicants are advised that patents, data, and copyrights will be treated in accordance with 10 CFR 600.27 and with DOE-issued intellectual property guidance. 10 CFR 600 may be accessed through the "Procurement Links" menu selection at the following URL: <http://www.id.doe.gov/doeid/psd/proc-div.html>.

Standard Intellectual Property Provisions for use in DOE awards are at the following URL: http://www.ch.doe.gov/insidech/org_offices/occ/IPL/clause.htm.

K. Environmental Impact

DOE requires the submission of an applicant environmental checklist before award. Award will not be made until any and all environmental requirements are completed. This submission shall be completed when requested.

L. DOE Minority Economic Impact Loan

DOE Minority Economic Impact loans are not available for this solicitation.

M. Buy American

NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that to the greatest extent practicable all equipment and products purchased with funds made available under this award should be American-made.

N. Simpson-Craig Amendment

Applicant organizations which are described in section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995, will not be eligible for the receipt of federal funds constituting an award, grant, or loan.

- O. Lobbying Restriction
The awardee agrees that none of the funds obligated on this award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

- P. Equal Opportunity
The law states that recipients of DOE Federal financial assistance shall not discriminate on the basis of race, color, national origin, disability, age, sex or religion, and retaliation/reprisal for having previously filed a complaint.

- Q. Standard Terms and Conditions
Awardees will be required to comply with the standard terms and conditions listed at the following URL: <http://www.id.doe.gov/doi/psd/proc-div.html>.

SECTION VI: Supplemental Documentation

Who Must Submit Supplemental Documentation

If an applicant is selected for an award under this solicitation, the applicant **MUST** furnish the supplemental documentation identified in this section. All of the supplemental documentation should be furnished within 30 calendar days after the applicant receives notification of selection for negotiations and award. Failure to furnish the supplemental documentation in a timely fashion may negate the selection. Supplemental documentation will include pre-award certifications, cost information, point of contact information, and an environmental checklist.